

Secure Peer-to-Peer Networks for Scientific Information Sharing, Phase I

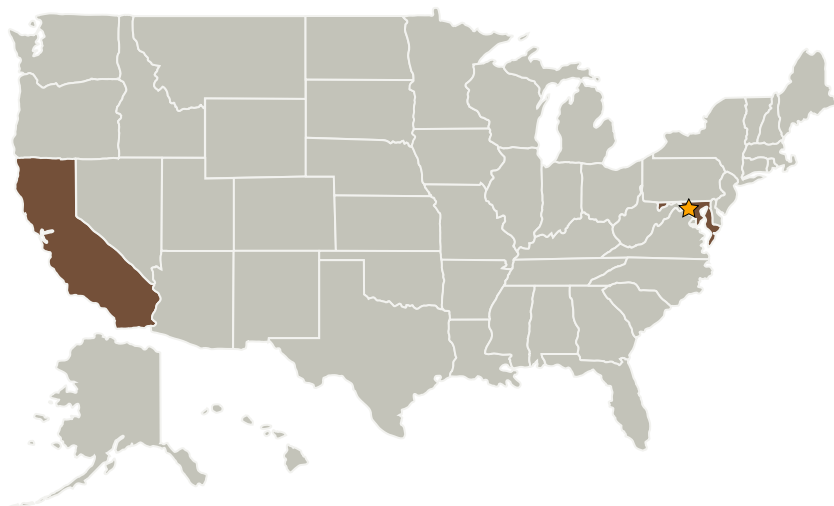
Completed Technology Project (2007 - 2007)



Project Introduction

Our goal is to adapt the peer-to-peer technology (P2P), which has been overwhelmingly successful in popular content distribution, as the basis for development of scientific collaboratory called Scientific Peer Network (SciPerNet), pronounced Cyper-Net. In contrast to P2P networks such as Gnutella, Bit Torrent, and others, SciPerNet incorporates three design elements that are critical to application of P2P for scientific purposes (Figure 1): • User Authentication • Data Integrity Validation • Reliable Searching In order to make SciPerNet an effective tool for distributed collaboration, it will also have built-in features (Figure 2) for creation and management of communities, access to authenticated list of scientists from different professional organizations such as American Physical Society, management and sharing of files, blogs and whiteboarding. It will also provide a number of novel features such as (i) Profiler which replaces the need to create personalized websites, (ii) searching documents for query hits rather than the usual file name only, (iii) U-publish which enables "publishing" scientific papers and their supplementary materials, and EmailAttacher which works by dragging a file into an email utility but rather than attaching and sending the file, it simply creates a link to the folder where the file resides with the instructions for the user on the other end to retrieve it.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center
(GSFC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
SciberQuest, Inc.	Supporting Organization	Industry	Del Mar, California

Primary U.S. Work Locations

California	Maryland
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - └ TX05.3 Internetworking
 - └ TX05.3.3 Information Assurance